

Synopsis of Laboratory Welders (Project 06-21) (3/07)



There are numerous types of dental laboratory welders on the market today. The two types of commonly used dental laboratory welders are the arc and laser welder. The main difference between traditional electric arc welding processes and laser welding is in the mode of energy transfer. In arc welding, the intense heat needed to melt metal is produced by an electric arc. The arc is formed between the actual work and an electrode (stick or wire) that is manually or mechanically guided along the joint. The laser welding technique uses a laser beam to join pieces of metal. The laser beam provides a concentrated heat source, allowing

for narrow, deep welds. Lasers welders can operate in both single (pulsed) and continuous mode. Continuous welding is accomplished with an incessant laser wave while the single or pulsed mode operates on a single surge. Some arc and laser welders are equipped with the capability to produce a spot, square, or flat weld shape. Both arc and laser welders are used for the creation and repair of dental restorations in orthodontics, removable and fixed prosthodontics. Historically, "torch soldering" has been the method of choice, but with advances in technology and more choices on the market, lasers appear to be a significant improvement for these challenging laboratory procedures. Compared with traditional soldering techniques, laser welders can more precisely join a wider range of metal alloys with reduced heat. The reduction of heat allows a more accurate/homogeneous "joint" and allows the "post soldering" of appliances with acrylic/porcelain with less fear of catastrophic failure. Laser welders allow program parameters for single surge or continuous use, preset programs and chamber lighting. They vary in size, shape, power, construction and application. Additional features include a video adapter that plugs into a computer to give a video screen display.

The purpose of this synopsis is to accumulate information placed in an easy-to-read format, providing federal service customers a starting point for researching and purchasing an economical dental laboratory welder. The synopsis provides information obtained from the manufacturers on selected dental laboratory laser and arc welders. [See below for tables](#). The dental laboratory welders are listed alphabetically by company.

Synopsis of Laboratory Welders* (1 of 5)

Product/Model	Laser T Plus	FiberWeld V4 Fiber Optic Laser	LaserStar 2000 Series
			
Manufacturer	BEGO 24 Albion Rd., Suite 103 Lincoln, RI 02865 (800) 342-2346 (401) 334-9261 FAX www.bego.com	Biogenic Technical Instruction 409 Mandeville St. Utica, NY 13502 (800) 367-3322 (315) 797-6165 FAX www.btilaser.com	Crafford-LaserStar Technologies Corp. 1 Industrial Ct. P.O. Box 15155 Riverside, RI 02915 (401) 438-1500 (401) 434-7260 FAX www.laserstar.net
Price (retail/govt)	\$26,950/\$24,255	\$29,900/\$27,900	\$22,000-\$26,500/call for government price
GSA Contract	No	No	No
Warranty	1 year	2 years	1 year
Welder Type	Laser	Laser	Laser
Power (Watts)	40	30-50	30
Weld Shape	Spot	Square/flat	Spot, Square, Flat
Pulse (single, continuous, both)	Both	Continuous	Both
Maximum Vacuum Pulse Power	4kW	50W	30W
Viewing Magnification	15X	15X	10X-40X
Video Screen	No	Yes	Yes
Video Adapter	No	Yes	Yes
Setting Adjustments	Keyboard, Joystick	Joystick, In-chamber	Keyboard, Joystick
Preset Programs	10	25	80




*Data for these tables were obtained from the manufacturers and the Internet. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

Synopsis of Laboratory Welders* (2 of 5)

Product/Model	LaserStar 7000 Series	Phaser MX1	ALPHALASER ALC 30
			
Manufacturer	Crafford-LaserStar Technologies Corp. 1 Industrial Ct. P.O. Box 15155 Riverside, RI 02915 (213) 612-0622 (401) 438-1500 (401) 434-7260 FAX www.laserstar.net	Dentation Inc. 435 West 23 rd St. Apt 1AA New York, NY 10011 (866) 929-8024 (212) 929-8324 (212) 929-7444 FAX www.dentation.net	Gramm Technology 1502-A Featherstone Rd. Woodbridge, VA 22191 (800) 752-8846 (703) 594-2702 (703) 594-2903 FAX www.grammusa.com
Price (retail/govt)	\$27,000-\$31,000/call for government price	\$8,950/call for government price	\$25,000/call for government price
GSA Contract	No	No	No
Warranty	1 year	2 years	1 year
Welder Type	Laser	Arc	Laser
Power (Watts)	50	40	35
Weld Shape	Spot, Square, Flat	Spot	Spot
Pulse (single, continuous, both)	Both	Single	Single
Maximum Vacuum Pulse Power	7.5-10kW	2Hz	4.4kW
Viewing Magnification	15X (25X, 40X optional)	3X-20X	16X
Video Screen	Yes	No	No
Video Adapter	Yes	No	Yes
Setting Adjustments	Keyboard, Joystick	Keyboard	Keyboard
Preset Programs	80	5	16

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Synopsis of Laboratory Welders* (3 of 5)

Product/Model	ALPHALASER ALDT 35 	ALPHALASER ALP 50 	Mini Laser Welder 
Manufacturer	Gramm Technology 1502-A Featherstone Rd. Woodbridge, VA 22191 (800) 752-8846 (703) 594-2702 (703) 594-2903 FAX www.grammusa.com	Gramm Technology 1502-A Featherstone Rd. Woodbridge, VA 22191 (800) 752-8846 (703) 594-2702 (703) 594-2903 www.grammusa.com	Harris Discount Supply 7506 W. Melrose Ln. Oklahoma City, OK 73127 (800) 227-8524 (405) 440-2229 (405) 440-2299 FAX www.harrisdiscount.com
Price (retail/govt)	\$29,000/call for government price	\$32,000/call for government price	\$12,900/call for government price
GSA Contract	No	No	No
Warranty	1 year	1 year	2 years
Welder Type	Laser	Laser	Laser
Power (Watts)	35	50	700
Weld Shape	Spot	Spot	Spot
Pulse (single, continuous, both)	Single	Single	Both
Maximum Vacuum Pulse Power	5kW	5.5kW	3kW
Viewing Magnification	16X	16X	10X
Video Screen	No	No	No
Video Adapter	Yes	Yes	Yes
Setting Adjustments	Keyboard	Keyboard, Joystick	Joystick
Preset Programs	16	10	0

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Synopsis of Laboratory Welders* (4 of 5)

Product/Model	Master Kubo	StarWeld Performance	Smart Plasma Welder
			
Manufacturer	Laservall SpA 136 Newell Ave. Pawtucket, RI 02860 (800) 367-3322 (401) 724-0076 (401) 724-6310 FAX www.laservall.com	Rofin-Baasel Inc. 330 Codman Hill Rd. Boxborough, MA 01719 (978) 635-9100 (978) 206-7536 FAX www.rofin.com	Schutz Dental Group Inc. 431 Howe Ave. 2 nd Fl. Shelton, CT 06484 (866) 922-1484 (203) 922-1484 (203) 924-9738 FAX www.sdginnovations.com
Price (retail/govt)	\$29,900/call for government price	\$22,000-\$29,000/call for government price	\$8,496/call for government price
GSA Contract	No	No	No
Warranty	2 years	1 year	1 year
Welder Type	Laser	Laser	Arc
Power (Watts)	40-60	30-50	200-1,000
Weld Shape	Flat beam profile	Spot	Spot
Pulse (single, continuous, both)	Continuous	Both	Both
Maximum Vacuum Pulse Power	4.0-6.5kW	6.0-10.6kW	30W
Viewing Magnification	15X	16X-40X	5X-20X
Video Screen	Yes	No	No
Video Adapter	Yes	Yes	Yes
Setting Adjustments	Dial, Joystick	Keyboard, Joystick	Keyboard
Preset Programs	25	10	4

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Synopsis of Laboratory Welders* (5 of 5)

Product/Model	LWD4 
Manufacturer	Z-Tech 611 Wilshire Blvd. Suite 1200 Los Angeles, CA 90017 (213) 627-6925 (213) 627-6807 FAX www.yahalusa.com
Price (retail/govt)	\$31,500/call for government price
GSA Contract	No
Warranty	2 years
Welder Type	Laser
Power (Watts)	0.5-5.0
Weld Shape	Automated pulse shaping
Pulse (single, continuous, both)	Both
Maximum Vacuum Pulse Power	75W
Viewing Magnification	16X-20X
Video Screen	Yes
Video Adapter	Yes
Setting Adjustments	Keyboard, Joystick
Preset Programs	5

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